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## RECENT ADVANCES IN TREATMENT\*

### With Historical Notes

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Since the writings of Hippocrates (460-370 B. C.), Galen (130-200 A. D.), Pedacius Dioscorides (20-75 A. D.), the originator of *materia medica*; Archigenes, of Apamea, (54-117 A. D.), Aretaeus the Cappadocian (about 150 A. D.) who first gave masterly sketches of diphtheria ("ulcera Syriaca"), small pox, tetanus, phthisis, diabetes, certain palsies and pleurisy with empyema; Isaac Judaeus (or Isaac Israeli), about 825 A. D., who wrote "Liber de Febribus," Rhazes (860-932) who separated small pox and measles, Aetius (500 A. D.) who described kidney disease (with necropsies on human beings), and the works of Avicenna (980-1036), Marcello Malpighi (1628-1694) and G. B. Morgagni (1682-1771) who contributed to our knowledge of kidney disease, much progress has been made in the treatment of disease.

In the brief time allotted me, I shall endeavor to review, in somewhat sketchy manner, some recent advances in the treatment of several diseases.

Quoting Isaac Judaeus, (eleven hundred years ago), may I repeat "He whose business it is to bore a pearl must do his work carefully in order not to mar its beauty by haste. Even so, he who undertakes the cure of human bodies, the noblest creations on earth, should take thought upon the diseases with which he comes in contact and give his directions after careful reflection, so that he fall into no irremediable error. Therefore the sage (Mesue, 777-837) says: 'If you find a physician who is ready as soon as asked to give information about every disease and particularly to praise his own methods of treatment, you may regard him as a knave.'" "Never rely in treatment upon wonder-working cures, for these de-

pend mostly upon ignorance and superstition." "Endeavor in thy treatment always to use the simple drugs, because it is easier for thee to acquire the knowledge of their action than that of the complicated ones."

Remember, if you please, with Isaac Judaeus, that "The function of the physician is twofold, preserving health and curing disease; and the former is greater than the latter; for it is better for man that he avoid becoming ill than that he become ill and be cured."

### ANEMIAS

Salomon Reiseliu, in *Miscellanea curiosa sive Ephemeridum medico-physicarum Germanicarum Academiae, Decuriae II, Annus Septimus, Observation XIV, page 24, 1688, (Norimbergae, Wolfgangi Mauriti Endteri, anno 1716)* under the title "Exsanguie fere corpus," reports, perhaps, one of the earliest cases of severe anemia (after necropsy) in the literature. Lieutaud (1703-1780) in *Précis de la Médecine Pratique* —I, P. 72, 1761; I, pp. 122-126, 1776, Paris and *Synopsis Universæ Praeoxos-Medicæ Pars Prima, pp. 52-54, 1765 Amstelodami; Hallé (1804), (Précis de la Médecine Pratique P. 72, 1761), Schwenke (Halleri Disputationes Medicæ, vol. 7, Lausannae, 1759), Combe, of Edinburgh (Trans. Medico-Chirurg Soc'ty, Edinburgh, I, pages 194-204, 1824), Walter Channing (1842), Thomas Addison (1849-1855), Lebert (1853), and Anton Biermer (1868, 1872) gave us the early information on anemia.*

In passing I may note that while Thomas Addison (1793-1860) merits the recognition as the first to describe Addison's disease of the suprarenal capsules in masterly style, he apparently was not the first to recognize the severe form of "idiopathic anemia," at times known as Addisonian anemia or Biermer-Ehrlich anemia. Combe and Channing (1786-1876), and perhaps others, have recognized this severe form of anemia long before Addison wrote his few lines on the subject of "idiopathic anemia, a very remarkable disease" in the early paragraphs of his

\*Read by title before the Medical Society of Delaware, Lewes, September 27, 1932.

monograph "on the constitutional and local effects of disease of the suprarenal capsules." It was Anton Biermer (1827-1892) who first applied the term "progressive pernicious anemia" to this form of severe (primary) idiopathic anemia. J. S. Combe, in his paper (May 1, 1822) on "History of A Case of Anaemia," read before the Medico Chirurgical Society of Edinburgh, gives an excellent description of a case of (pernicious) anemia first seen by him in July, 1821, with necropsy findings (autopsy thirty-six hours after death). Combe speaks of a "very peculiar disease, which has excited little attention among medical men, and which has been altogether overlooked by any English author with whose writings I am acquainted." In reporting his interesting case of anemia, he states "that if any train of symptoms may be allowed to constitute *Anaemia* a generic disease, the following may be considered an example of it in its most idiopathic form."

Of interest, too, is the fact that in their book on "Elements of the Practice of Medicine," I, 1839, London (Longman, Orme, Brown, Green & Longmans), Richard Bright and Thomas Addison do not discuss "anaemias" or "idiopathic anemia," although they discuss among other subjects—pneumonia, peritonitis, appendicitis, hepatitis, nephritis, rheumatism and gout, etc. Richard Bright (1789-1858), at Guy's Hospital, made his first drawings of the granular kidney. His Gulstonian lecture (1833) still remains a classic. Bright, in his "Reports of Medical Cases" (1827) described carefully a case showing bronzing of the skin in which the suprarenal capsules were destroyed. The honor of the first description of this disease is, however, accorded his associate at Guy's Hospital, T. Addison (1849). Clarissimus Galen speaks of the liver as important in bloodmaking, "hepar est sanguificationis principium . . . Entenim quia hepar facultatis sanguificatricis est instrumentum" . . . [Galen Pergameni-De Locis Affectis, Lib. V, Caput VI, P. 766, lines 3-6 (second column), 1551, Basileae; also De Usu Partium, Lib. IV, P. 221 and P. 217.]

C. Galen (130-200 A. D.) says "quippe nisi hepar afficiatur . . ." "Etenim quia ipsum, eius facultatis, quae sanguinem gignit instrumentum est, consequens est, ut uitiatu hoc uiscere, actio quoque eius uitietur"—De Morborum, Basileae 1549, Lib. V, P. 130, lines 13-16, (first column); Guilielmo copo Basiliensi interprete.

Treatment of severe secondary anemias, progressive pernicious anemia and megalocytic hyperchromic anemias in children and adults has materially advanced during the past ten years.

Since the use of liver, liver fraction G of Cohn, autolyzed (Herron) liver extract, *hepatrat*, "hæmopoietine," (Wilkinson, 1932), stomach, gastric juice, liver and beef treated with gastric juice, and the newly discovered anti-anemic hematopoietic gastric principle ("*Addisin*," "*Addisonin*" or "*Biermerin*") in the treatment of true pernicious anemia, good results have also been reported from the use of these preparations by mouth and by injections with the combined use of iron, copper, and arsenic in the treatment of hyperchromic anemias and severe secondary anemias in children and adults.

There is no doubt, now, that ventriculin, extralin (Lilly), hepatopson, *hepatrat*, *gastrolin*, hepracton, (Merck), and campolon (liver injections), *addisin*—for which I suggest the name "*Biermerin*" or "*Addisonin*," although I believe "*Addisonin*" should be preferably applied to the adrenal cortical hormone *Eschatin*, cortin, or cortigen, (used in the treatment of Addison's Disease of the Adrenals), Williams and Vander-Veer's (Proc. Socy. Exper. Biol. & Med., 1932, XXIX, pp. 858-859) anti-anemic factor in bovine gastric juice and the specific gastric hormone (addisin) of Morris, Schiff, Burger and Sherman (Jour. A. M. A. 98: No. 13, pp. 1080-1081, March 26, 1932) have, in recent months, saved the lives not only of true cases of Biermer's Anemia, but have, with the joint use of iron and high vitamin diets, brought about rapid improvement and recovery in many cases of severe secondary anemias in children and adults. Boycott and Jones (1911) used "*haemopoietine*" in rabbits. Ungley (1932) used *ox-brain* and Will Sargent (1932) used 150 grains of Bland's iron daily in treating subacute combined degeneration of the cord in pernicious anemia.

The injection of comparatively small doses, once or twice weekly, of liver and stomach (gastric juice) preparations, and the administration of iron, copper, and some yeast preparation rich in B vitamins will usually give happy results in our anemic patients.

For further information on this form of therapy I must refer you to the papers by Prof. Gansslen, of Tübingen, Germany; L. S. P. Davidson (Brit. M. J., Feb. 6, 1932); Billig, West-Watson, and Young (Brit. M. J. Feb. 13, 1932),

Strauss and Castle of Boston (J. A. M. A., May 7, 1932, p. 1620), the paper by Richter, Meyer and Ivy on "The Treatment of Pernicious Anemia with Horse Liver Extract" (J. A. M. A., p. 1623, May 7, 1932), Minot and Castle's (Ann. Int. Med. 5: 159, August 1931) paper in which the "active principle" was reported to be present in a number of tissues, and the Gulstonian Lectures by L. J. Witts, on "Pathology and Treatment of Anæmia" (The Lancet, March 1932).

Marmite has recently been used successfully by Vaughan and Hunter, of the London Hospital (Lancet, p. 829, April 16th, 1932) in the treatment of megalocytic hyperchromic anaemia, particularly when occurring in idiopathic steatorrhoea (*coeliac disease*). Wills (1932) found that marmite was as effective as liver extract in the treatment of tropical megalocytic anemia.

Since Gee (1888) gave us his description of Celiac disease, most of the reported cases have shown hypochromic secondary anemia associated with cachexia, pallor, dropsy, often with tetany and bone deformities.

Vaughan and Hunter have found about twenty reported cases with a hyperchromic megalocytic anemia and of their own fifteen cases of celiac disease associated with tetany, and often with bone deformities, two were found to have a hyperchromic megalocytic anemia. The use of marmite, a yeast preparation, rich in B<sub>2</sub> vitamin, cured the hyperchromic anemia, although the other symptoms remained unaffected. Haas of New York, used ripe *bananas* and banana powder (Merck) in the treatment of celiac disease.

There is no question that anemias (microcytic hypochromic) due to infections, dietary deficiency, starvation, inanition, and hemorrhages, are greatly improved by the use of liver, brain and stomach preparations if combined with liberal doses of iron. The megalocytic hyperchromic anemias may improve with injections of liver alone, or the addition of reticulo-endothelial tissue preparations (reticulin, spleen extract,) and gastric hormone.

The *anemia of scurvy* (Mettier, etc., 1930) does not respond to liver extract and iron, but the administration of vitamin C (tomato, lemon and orange juices, and green vegetables) will cure these cases.

In children with deficient thyroid function, the administration of small graded doses of thyroid

extract with iron will improve the anemia promptly. I suggest the use of moderate doses of dilute hydrochloric acid, together with the active hematopoietic preparation, as being useful and very helpful in some of our anemic children. Finally, in blood-transfusions (of 100 c.c.-200 c.c.) we still have an important life-saving measure not to be ignored, even in this modern age of "new discoveries."

Libavius (1546-1616) was one of the first to suggest blood transfusion (1615), although it is thought that in 1492 Pope Innocent VIII received blood transfusions.

Denys (June 15, 1667, Paris) was the first to transfuse in man, followed (Nov. 23, 1667) by R. Lower, who performed the operation on Arthur Coga. Garrison believes the case of Innocent VIII is probably apocryphal.

Lucy Wills (Lancet, p. 837, April 16, 1932) found the use of marmite (yeast extract, containing B vitamins) very effectual in tropical macrocytic anemia. Liver therapy and marmite were the only useful measures in these cases, all other forms of treatment were useless. Tropical megalocytic anemia, celiac disease, sprue, and anemia in gastrocolic fistula and diarrheal diseases fail to respond to iron but react favorably to liver and marmite. Marmite, however, is useless in Addisonian (Biermer's) anemia. Parsons and his co-workers, of Birmingham, England, have found marmite and other yeast preparations of value in infantile anemias. Marmite may be given in soups, sandwiches, or sauces with fish, vegetables and meat dishes, in one or two teaspoonful doses.

Charlton, of Pasadena, California, (Am. J. M. Scs., 183, No. 6, pp. 832, 837, June, 1932), in his paper on "Therapeutic Effect of Hemolysis, Especially in the Anemias" reports successful results from the use of *reticulin*, an hemolytic enzyme extracted in 70 per cent alcohol from the omentum of the pig. He has used reticulin for more than three years. Fetal calves' livers, stomach, and liver preparations yield an abundance of "reticulin." It is capable of stimulating the regenerative function equal if not superior to liver feeding. In severe secondary anemias reticulin has not been effective until iron was added. That amount of extract required to hemolyze 1 c.c. of a 2 per cent suspension of red cells at 37 C. in eighteen hours has been taken as a unit. The resistance of the red cells is determined by titration with a standard or



master extract. It is thought by Charlton and others that red cell destruction is a function of the reticulo-endothelial system, concentrated more especially in the lymph nodes, omentum, spleen, liver and bone-marrow. In normal persons reticulins does not produce a leukocytosis. In pathologic conditions, the white cell increase is sometimes very striking. Thus, with two injections of reticulin, Charlton obtained, in a case of lobar pneumonia, a rise from 30,000 to 134,000 with 94 per cent neutrophils and a subacute case of agranulocytic angina a rise from 1,000 to 14,000 of which 84 per cent were neutrophils (with two injections of reticulin). He believes hemolysis stimulates new blood formation in conditions of anemia, and that in part explains the action reticulin.

Spleen solution (40 per cent), albumin-free, has been found useful in the treatment of urticaria and eczema. Injections of spleen liquid, according to Paul (1929, 1930), Zumbusch, Gaté and Charpy (1931), and others, promptly relieved children and adults of the severe itching in these cases of eczema and urticaria. Spleen extract has been used by R. M. Pearce (1930); Levy; Gonce, Middleton, Bradley and Nichols (June, 1932) in the treatment of leukemia. Schlesinger (Vienna) used spleen (*nodunon*) solution by injection for *anemia*, in patients that could not take liver or were "liver resistant."

#### SORANUS OF EPHEBUS

(2d century A. D.) gave a recognizable account of rickets. Pliny the Elder (23-79 A. D.) made the original reference to scurvy *stomacace* (Barlow's Disease, 1876-1882). Glisson (1650) also wrote an early note on scurvy.

#### ANEMIA IN RICKETS

We do not meet very frequently with severe cases of rickets and anemia, in these times of depression—although some of these sick little patients still visit our dispensaries and clinics. The popular enthusiasm for the use of viosterol and haliver oil, and the general widespread use of fresh fruits and vegetables, etc., have reduced the number of such cases.

Of historical interest is the fact that nearly three hundred years ago (1650) Francis Glisson (1597-1677), of Dorsetshire, first gave us his original classic account of infantile rickets, looked upon as a disease of the bony skeleton due to disturbed nutrition by arterial blood.

It was given the name *rachitis* at that time because the spine was so frequently involved. (*De rachiti de sive morbo puerili qui vulgo the rickets dicitur*, tractatus, London, 1650).

Daniel Whistler (1645) probably based his paper "*De morbo puerili Anglorum*" on Glisson's studies, according to Norman Moore. Various theories as to etiology have been brought forward by Findlay and Patou (Glasgow, 1907), Funk (1914) believed rickets was essentially a dietetic disease, Mellanby (1918) considered it a vitamin deficiency, and finally the antirachitic vitamin D was discovered—the absence or deficiency of which is considered as being a cause of rickets. Heitzmann (1873) suggested acidosis as the cause of rickets and this theory was revived by Freudenberg and Gyorgy.

Of course, the treatment of anemia in rickets is the treatment for the dietary (vitamin) deficiency, viosterol—250 D, cod liver oil, haliver oil, iron, liver, liver fraction, fresh air, sunlight, and good wholesome food including fresh fruits and vegetables, and plenty of fresh milk.

Josephs (1930), Mills (1931), Dameshek (1931), and Caldwell and Dennett (*Med. J. & Record* March 16, 1932) in 100 cases of anemia, used *copper with iron*, in the treatment of anemia.

#### HEMORRHAGIC DISEASES

In the treatment of various types of hemorrhages we have often been at a loss to control bleeding. In recent years, since Kaznelson, of Prag (1916) first suggested splenectomy, we have been able to check the hemorrhages in cases of essential thrombopenic purpura by the removal of the spleen, after deep x-ray treatment over the spleen and liver and blood transfusions have failed.

Various remedies have, from time to time, been recommended for the control of bleeding. Beef brain extract (kephalin), extract of blood-platelets (coagulen), thromboplastin, clauden, stryphnon (methyaminooaceto-ortho-dioxybenzol), emetine hydrochloride, "reticulins" (retikulon) or extract of reticulo-endothelial tissues (omentum, spleen, lymph-glands, liver, stomach and bone-marrow, yield an abundance of "reticulins"), muscle extract, fresh and dried human blood, sex hormones, parathormone, calcium, blood transfusions, x-ray, radium, snake venom, antivenin, rich vitamin diets, and splenectomy, have all been suggested and tried.



In the last chapter of Fabrica by Andreas Vesalius (1514-1564), second edition, (1552-1555), it is stated that excision of the spleen in the dog is not fatal. Brunner (1653-1727) made experimental excisions of the *spleen* and pancreas in dogs in 1683, keeping them alive (*Experimenta nova circa pancreas*, Amsterdam 1682).

Splenectomy is mentioned in the *Mischna* (189 A. D.) Chullin III, 2; and Kings (800 B. C.) I, Chap. I, 4.

Austin and Pepper (1913) conclude that a solution of hemolyzed blood-cells is the most readily prepared and active thromboplastic solution. The coagulation time, in plasmas with delayed coagulation time due to the formation of antithrombin, and to the union of antithrombin with prothrombin, is greatly hastened by the addition of thromboplastin solution. In their paper, they also report an instance of *familial purpura*—a woman, aged 24 years, who throughout her life had been subject to subcutaneous hemorrhagic extravasations. Her three sisters, her mother and a maternal aunt all had similar purpuric lesions. Only the aunt suffered pain at the time of the attacks. The blood showed 215,300 blood platelets, R. B. C. 4,580,000, W. B. C. 8,400 per cu. mm. Coagulation time 8 minutes. Later, the blood showed 226,000 blood platelets, R. B. C. 4,520,000, and coagulation time 6 minutes (Bogg's). They thought this patient had an excess of antithrombin. The fibrinogen content of the blood plasma was 3 per cent by volume.

P. Emile-Weil (July 8, 1931) does not hesitate to advise necessary surgical intervention in hemophiliac patients requiring operation. He differentiates between true hemophilia and hemogenia. Hemophilia is characterized by a markedly delayed clotting of the blood and perhaps faulty quality of the thrombocytes, without any abnormality of the capillaries. Hemogenia is an affection of the entire blood-producing apparatus—characterized by markedly increased bleeding time, fragility of the capillaries, poor retraction of the clot, extreme diminution of the hematoblasts, etc. The risk of operations in these cases is greatly reduced by repeated injections of 20 to 30 c.c. of blood serum, and blood transfusion of 200 c.c. - 300 c.c. of blood immediately preceding the operation. (*La Presse medicale*, 39: 1021-1024, July 8, 1931).

N. Culpeper's Legacy (1685, London) advises the use of a cob-web and dried powdered blood

(Aphorisms 123 and 124, pages 94 and 95) to stop bleeding. He recommends (Aphorism 18, page 76) *dried powdered liver* of a mad dog to be given a patient following a mad dog bite—(*early liver therapy!*).

*Hemophiliac* cases were first reported by Albucasis (1060-1122 A. D.), Philip Hochstetter (1587-1659), Alexander Benedictus (1525, 1539), H. Banyer (1743), Fordyce (1784), E. H. Smith (1794), Rave (1798), John C. Otto (1803), Consbruch (1810), Buel (1817), Nasse (1820), and others.

John C. Otto, of Philadelphia, described hemophilia as a distinct clinical entity in his "Account of An Hemorrhagic Disposition Existing in Certain Families."

Mention should here be made that Dioscorides, nineteen hundred years ago, arrested bleeding with fresh bird's blood applied locally. In the "Three Exact Pieces" of Leonard Phiorovant, in the Second Book of Secrets, Chap. XLVI, p. 86 and Chap. XLVII, p. 87 (London, 1652) dried human blood, made in powder, is recommended "to stay the flux of blood." Samuel M. Peck (1932), of the Mount Sinai Hospital, New York, has used injections of snake venom in attempts at treatment of hemorrhagic diathesis. He used venom of the moccasin snake (*Ancistrodon piscivorus*). The standard dose for an adult was 0.2 c.c. of a 1 : 3,000 solution in physiological saline given intradermally. This was increased in most cases to two injections of 0.2 c.c. each in different sites. The injections were given once or twice weekly, and the duration of the treatment varied with the cases. Rosenthal has obtained encouraging results with snake venom, in two cases of hemophilia. Peck obtained good results in a case of Frank's capillary toxicosis (Henoch-Schonlein's syndrome). This patient had recurrent purpura, hematuria, and a history of prolonged and profuse menstrual periods. Good results also followed snake venom treatment in several cases of thrombocytopenic purpura.

Stockton and Franklin (J. A. M. A. 96: 1931) used antivenin in a case of purpura with good results. Eley and Clifford (Amer. J. Dis. Children, 42: pp. 1331-1338, Dec. 1931) treated eight children suffering from hemophilia, according to the method of Vines (1920) and Mills (1926), by *protein sensitization* for a period ranging from a few months to more than two years. In each case there was a definite reduction in the coagulation time of the capillary

blood. The coagulation time of the venous blood was not altered. This therapy was of definite benefit in the prevention or control of bleeding from superficial injuries but not in cases of hemorrhage from the larger blood vessels, intestinal bleeding, and hemorrhagic effusion into joints. They recommend the use of protein sensitization in every case of hemophilia. Patients (after intradermal testing) are rendered sensitive to sheep, bovine or horse serum by the intramuscular injection of 4 c. c. of the selected serum. After an interval of from eight to ten days the intradermal injection is repeated to see if a wheal appeared at the sight of injection, indicating that the patient is sensitive to the specific protein. Intradermal injections of the particular protein must be repeated at intervals to keep the patient sensitized.

Carroll Birch (1931, 1932), of Chicago, has used female sex hormones and ovarian extracts in male "bleeders" with apparent success. Lachlan Grant (Lancet 2: 1279, Nov. 5, 1904) suggested the use of ovarian extract because he thought that females are shielded against hemophilic bleeding by the protective influence of ovarian secretions. Many doubtful cases of so-called "female hemophiliacs" have been reported. (Goldstein, H. I.—Medical Review of Reviews, N. Y., 39: No. 7, pp. 329-333, July 1933).

Arthur Marlow (July 1931) similarly found that intradermal injections of animal serum in individuals who had been sensitized previously to the serum, produced a prompt decrease in the coagulation time of capillary blood which persisted for more than twenty-one days in two patients with hemophilia. Liver administration was apparently without affect. Marlow found that the coagulation time of the venous blood was not effected. The use of tissue fibrinogen, orally and subcutaneously, and extralin with iron or the new active hematopoietic gastric anti-anemia principle ("Biermerin" or "Addisonin",—addisin) with viosterol—250 D, and calcium will be helpful in many of the cases of hemorrhagic diathesis. In using viosterol—250 D, Gordon and Lieberman, of the United Israel Zion Hospital, Brooklyn, have shown a definite pharmacologic idiosyncrasy to minute amounts of irradiated ergosterol (viosterol—250 D) exists in some infants. Untoward symptoms were noted in fifteen of two hundred infants observed over a period of six months to one year (doses

of 1—9 drops a day), (Amer. J. Med. Scs. 183, No. 6, pp. 784-795, June 1932).

#### UREMIA AND DROPSY

Blackfan and Hamilton (Boston Med. Surg. Jour., October 1928) treated eleven cases of uremia in children with increased blood-pressure, with intravenous injections of magnesium sulphate solution 1—2 per cent). Eight of these cases recovered. The other three were not treated until very late in the disease. The oral administration of magnesium sulphate solution in rather large doses has also been used with good effect.

C. B. Watson, of Edinburgh, (Brit. M. J. p. 1086, Dec. 12, 1931) used magnesium sulphate solution intravenously in a boy nine years old who had a number of convulsions and was unconscious from scarlatinal nephritis with uremia and hypertension. The boy recovered.

In 1770, Domenico Cotugno (1736-1822) recorded the presence of serum-albumin in the urine of dropsical patients.

W. C. Cruikshank (1745-1800), in 1790, reported instances of dropsy with no albumin in the urine, and William C. Wells (1757-1818), of Charleston, S. C., for the first time, perhaps, demonstrated the presence of blood and albumin in the urine of patients with dropsy following scarlet fever.

According to Franklin R. Nuzum (1932) this type of kidney disease had never before been described. It was not until Bright's (1789-1858) contributions, (1827, 1831, 1833) that the relation of dropsy with certain types of liver and kidney disease was established.

It was Solon, in 1838, who introduced the term "albuminuria",—albumin in the urine, and he also found that granular kidney disease with high blood pressure often occurred without dropsy.

In dropsy associated with nephrosis, the use of thyroid extract and salyrgan (by injection) gives prompt results. Calcium and parathyroid may also be used.

In cardio-renal dropsy, the use of a good preparation of (the whole leaf) digitalis, in tablet form, with salyrgan and euphyllin (metaphyllin) as required, will soon rid the patient of the excess fluid accumulated in the tissues and cavities. Often the use of ammonium chloride and

calcium chloride increases the effect of the salyrgan or novurit.

#### PROGRESSIVE MUSCULAR DYSTROPHY

Milhorat, Techner and Thomas (Proc. Soc't'y. Exper. Biol. & Med., pp. 609-611, XXIX, 1932) have found that patients with this disease show a creatinuria even when maintained on a creatin-free diet, and in contradistinction to the normal subject excrete ingested creatine almost quantitatively (65-100%). This inability to retain ingested creatine is in proportion to the severity of the disease.

Brand, Harris, Sandberg, and Ringer (Amer. J. Physiol. 90: p. 296, 1929) were the first to recognize the relationship of *glycin*, that the ingestion of this amino acid, in muscular dystrophies, is followed by a large increase in the creatinuria.

Milhorat and his co-workers, of Leipzig, suggested that the prolonged administration of this amino acid (*glycin*) might have an influence on the clinical and chemical course of this disease, because of this significant relationship between *glycin* (which the normal subject can readily synthesize), and creatine, which plays an important role in muscle function. They studied six patients for a number of months—three were cases of progressive muscular dystrophy, and three were cases of pseudo-hypertrophic muscular atrophy. The daily (adult) ingestion of 5 gm. of *glycin* was followed by a definite rise in the creatinuria.

After a period of some weeks the creatinuria begins to decrease, even if the *glycin* is continued. Coincident with the decrease in the creatinuria, there is a rise in the creatinine output, and an improvement in the patient's ability to hold ingested creatine. During this time, the condition of the patient improves in a remarkable manner.

The first symptom manifested in three of Milhorat's patients was a curious "crawling" feeling in the muscles, which appears some days before the creatinuria begins to fall. Fatigue becomes lessened, the muscles feel light, and more refreshed, and gradually certain muscle groups begin to improve, so that stair climbing and bicycle riding become possible. There was apparently no improvement in three control cases with amyotrophic lateral sclerosis, congenital idiocy and severe chronic rheumatism of the joints.

Milhorat and his associates believe "*glycin* has an important function in muscle physiology, and a significant role in the pathogenesis and treatment of this disease".

N. W. Winkelman, of Philadelphia, has recently treated five patients with *glycin*, including two children.

I have been trying it out in a case of amyotrophic lateral sclerosis, in conjunction with the use of mercury succinimide injections.

Warner and Hampson (1932) used parathormone and calcium in 3 cases of advanced progressive muscular atrophy. Hough (1931) treated cases of muscular dystrophy with adrenalin and pilocarpin injections.

#### DIPHThERIA

Diphtheria, known as askara or serunke (cynanche), was much feared by the ancient Hebrews in Talmudic times (2d-4th centuries), and a warning blast of the shofar was always *immediately* given when the first case was located in a community, altho (according to Preuss) the shofar was ordinarily sounded only after the occurrence of the third case of an infectious disease.

Aretaeus, the Cappadocian, who lived in the 2d to 3rd century A. D., and is frequently ranked next to Hippocrates in his accuracy of his pictures of disease, gave a classic account of diphtheria ("*ulcera Syriaca*").

Aetius (500 A. D.) who lived in the 6th century A. D., gave a description of epidemic diphtheria similar to Aretaeus, mentioning paralysis of the palate as a sequel.

The Chronicle of St. Denis (580 A. D.) mentions diphtheria as "*esquinancie*" and Baronius described Roman epidemics of 856 and 1004. A Byzantine epidemic (1039) is recorded by Cedrenus, under the name of "*cynanche*", according to Hirsch. In 1517 *malignant diphtheria* occurred in Amsterdam and the Rhineland. Diphtheria was described by Schedel in 1492. Casales (1611), Villa Real (1611), and Munez Herrera (1615), among others, described it as "*garrotillo*" (after the Spanish mode of strangulation—in the words of Herrera, "*Sofoca la paciente a' manera del garrota*").

Other early writers on the subject were Gil Pina (1636), Heredia (1665), and Antonio Pascual (Valencia, 1784) who reported three hundred cases. Many epidemics of diphtheria occurred in Spain during 1583-1610. According to Jacobi, cases appeared in Roxbury, Massachu-



setts, in 1659. It appeared in New York in 1751. William Douglass wrote on "Angina Ulcusculosa", in 1736, an excellent description of scarlatinal sore-throat, while "an American classic of the first rank" (Osler), was Samuel Bard's (1742-1821) essay on diphtheria or "angina suffocativa" (1771). In 1826, Pierre Bretonneau (1771-1862), of Tours, wrote on diphtheria and gave the disease its present name (Des inflammations speciales du tissu muqueux et en particulier de la diphtherite, Paris, 1826). It was Bretonneau who performed probably the first successful tracheotomy in croup. (Des inflammations speciales, Paris, 1826, 300-338). Our own Abraham Jacobi (1830-1919) wrote on diphtheria in 1876 and 1880. (In 1854 he made a laryngoscope of his own). Friedrich Löffler (1852-1915), in 1884, discovered the diphtheria bacillus. Edwin Klebs (1834-1913) saw the diphtheria bacillus in 1883. Emil von Behring (1854-1917) began to produce antitoxin on a large scale in 1894. Paul Ehrlich (1854-1915) improved upon Behring's antitoxin. Welch, of Baltimore, with Flexner, demonstrated the pathological changes produced by experimental injection of the diphtheria toxins simultaneously with von Behring (1891-1892). In 1913 Bela Schick introduced the susceptibility test for diphtheria.

With all this great progress in the prevention and cure of diphtheria, we still, unfortunately, have too many cases of malignant and fatal cases of diphtheria. What shall we do for these cases?

Fatalities and serious complications and sequelae in diphtheria are almost entirely accounted for by the neglected, carelessly handled, or misdiagnosed and late treated cases, the toxic faucial and the laryngeal cases.

It is recognized and well known that the occurrence of severely toxic cases of the disease varies in different epidemics in the same localities and in different areas at the same time. Occasionally (tho fortunately now rarer) we meet with severe toxic faucial diphtheria, in which the early and free use of diphtheria antitoxin seems to have no effect. Many more of the fatal cases, unfortunately, are still due to the failure of early diagnosis and prompt use of adequate doses of diphtheria antitoxin. Usually, the severe toxic and fatal case of diphtheria is the late diagnosed and late (insufficiently) treated case. In the severe cases, it is important

to give liberal doses of antitoxin, intravenously and intramuscularly. Park, of New York, favors the intravenous route, in amounts not to exceed 50,000 units. In some of the late treated cases, no amount, no matter how large, of antitoxin seems to do any good.

Schwenkter and Noel (Bull. Johns Hopkins Hosp. 1929, 45, 259; 1930, 46, 359) have shown that the toxin of diphtheria causes profound changes in carbohydrate metabolism. In severe cases there is, at first, a rise in the blood-sugar which is due to an increased glycogenolysis, glycogen disappears from the liver, and, most important, from the bundle of His, and hyperglycemia maybe succeeded, as toxemia increases, by hypoglycemia. Then, because of the failure of pancreatic insulin production and of other normal sources of supply (of insulin), as the result of the toxic damage to the tissues generally, the blood-sugar again rises with the production of hyperglycemia. Dextrose may safely be given by mouth and by intravenous injections in most cases of diphtheria.

Hector (Lancet, II, 642, 1926) first suggested the injection of insulin in diphtheria (with blood-sugar estimations).

Benn, Hughes and Alstead (Toxic Diphtheria: combined antitoxin and dextrose-insulin therapy—Lancet, No. 5658, 222, pp. 281-285, Feb. 6, 1932), of the Birmingham City Hospital, England, and Schwenkter and Noel have treated their toxic diphtheria cases with dextrose-insulin injections in addition to diphtheria antitoxin.

Benn, Hughes and Alstead confirmed the work of Schwenkter and Noel on the carbohydrate metabolism in toxic diphtheria. Disordered carbohydrate metabolism has been noted by Mikami (1925), Lawrence and Buckley (1927), Sweeney (1928), Lereboullet, Marie, & Leprat (1928), Lereboullet & Perrot (1928), Elkeles and Heimann (1927), and Kostyal (1930.)

Lereboullet, Marie and Leprat showed that in a considerable number of cases of grave diphtheria a definite hypoglycemia is present, while Elkeles and Heimann found a diabetic type of blood-sugar curve for a long period after recovery from diphtheria and Schwenkter and Noel (above quoted) also report this type of sugar curve.

J. A. Toomey (Amer. Jour. Dis. Child. 1928, 35, p. 4) found that the use of dextrose decreased the incidence of heart-block and acute

dilatation, but all cases in which heart-block was present died. L. Kostyal (Monatschr. f. Kinderheilk. 1930, 48, p. 162) used dextrose-insulin therapy in all severe cases of diphtheria. Benn, Hughes and Alstead treated eighty-nine consecutive cases by dextrose-insulin therapy. Intravenous injections of diphtheria antitoxin were employed in all cases, after a preliminary intramuscular injection. The mortality in this dextrose-insulin group of toxic diphtheria was 22.5 per cent, and in a similar series of (131) cases in which the dextrose and insulin were not used the mortality was 36 per cent. The incidence of serum-sickness: rigors, collapse, vomiting, and rashes, within an hour or an hour and a half after the intravenous injections of serum was considerably reduced in the dextrose-insulin group. Eighteen per cent of the dextrose-insulin group showed early serum phenomena. Thirty per cent of the control group developed reactions.

According to Schwenkter and Noel, one unit of insulin is given for every 1—2 gm. of dextrose and it is often injected twice daily until the patient is out of the acute toxemic stage. Dextrose (20 gm. in 50 per cent solution) and 30,000-50,000 units of antitoxin are given together, intravenously, very slowly (at 37° C.), an hour after the preliminary intramuscular injection of 25,000-50,000 units of antitoxin and blood-sugar estimation. After the intravenous injection, another blood estimation is made. For the details of this form of therapy in *toxic and malignant diphtheria*, I refer you to the original papers above mentioned.

It is of interest to note, here, that Chamberlain and Alstead, of England, (Lancet, p. 970, May 2, 1931) reported a case of a woman, aged 28 years, who, at the age of 10, developed complete heart-block during an attack of diphtheria, —and, during these eighteen years caused practically no symptoms (no Stokes-Adams seizures). Ducamp and Janbon (Bull. Soc. Sci. med. et biol. de Montpellier, 1924-1925, VI, 33) described a single case characterized by complete heart-block in which recovery took place and normal rhythm was re-established. Parkinson (1915) published the first undoubted case of heart-block in diphtheria which later was replaced by auricular fibrillation (Heart, 1915, VI, 13). In the American Heart Journal, 1930, V, 592, Butler and Levine emphasized the importance of diphtheria as an etiologic factor in

the production of late heart-block.

Kundratitz (Medizin. Klinik, 26: 1289, Aug. 29, 1930) uses theophyllin with antitoxin in the treatment of malignant diphtheria. Theophyllin is employed to increase the tissue permeability. He thinks that the diphtheria toxins in malignant cases are absorbed by the cells to such an extent that the antitoxin neutralization in the tissues is no longer possible. During this method of treatment the patients should receive sufficient amounts of fluids, on account of the diuresis resulting from the theophyllin.

#### CHOREA AND RHEUMATISM

Thomas Sydenham (1624-1689) in his *Schedula Monitoria* (1686) gave us his differentiation of chorea minor, Richard Bright (1789-1858) described the bruit of the heart in chorea, and Osler (1849-1919) wrote a special monograph on chorea (1894). The name "St. Vitus's Dance" comes from the processions of dancing patients in the Strassburg epidemic of 1418, who proceeded in this wise to the Chapel of St. Vitus in Zabern for treatment, according to Garrison.

Chorea, as usually met with by us in recent years, certainly appears to continue to be more or less directly associated with attacks of rheumatism, streptococcal toxemia, infected tonsils and sinuses, and cardiac complications (endocarditis), altho other theories have been presented to explain the etiology of this disease.

Of historical interest may be mentioned that in 1472 appeared the first booklet on "the diseases of children", by Paulus Bagellardus, of Fiume, (died in 1494), from the press of Bartholomaeus de Valdezoccho and Martinus de Septum Arboribus. This is the second book printed in Padua and is largely a compilation from Arabian sources—Rhazes, Avicenna, Serapion, Halli Abbas,\* Mesue (777-837), etc. In this booklet, in Chapter XI, is discussed "De tussi et reumatismo infantium" (an excess of "rheum"). He recognized the peculiar type of breathing associated with *enlarged tonsils* and "cum incipit dormire videtur quasi suffocari".

According to Sir William Osler (*Incunabula Medica*, 1923) the treatise was absorbed in a second work on the same subject, "Regiment der jungen Kinder," by Bartholomaeus, Metlinger Augsburg, 1473, press of Gunther Zainer (also 1476).

\* Halli Abbas (died 994)—or Haly ben Abbas author of *Almaleki*—*Liber regius*, contains a description of small-pox ("variola"). The term "*variola*" was first used in the Chronicle of Bishop Marius of Avenches, Anno 570.

Guillaume de Baillou (1538-1616), a Paris graduate (1570), who probably first described whooping cough and was, perhaps, one of the first epidemiologists of modern times, according to Crookshank, introduced the term "rheumatism". Pitcairn (1788) and M. Baillie (1761-1823) in 1797, were among the first to call attention to rheumatism of the heart (endocarditis). Morgagni (1682-1771) gave one of the first descriptions of diseases of the cardiac valves. Vieussens (1641-1716) noted, at autopsies, pericardial adhesions and first described aortic insufficiency (1695) and mitral stenosis (1705), giving the character of the pulse and the pathologic features. It was Bouillaud (1796-1881), of Angouleme, who established the "law of coincidence" between the occurrence of heart disease and acute articular rheumatism (*Nouvelles recherches sur le rhumatisme articulaire*, etc. Paris, 1836); and in his treatise on articular rheumatism—"Traite' clinique du rhumatisme articulaire", Paris, 1840). Rheumatic endocarditis, with or without chorea, is sometimes spoken of as "Bouillaud's disease".

Etienne-William Vergne wrote on "Observations sur le Rhumatisme Articulaire Aigu" *Traite' par L'Opium a Haute Dose—These de L'Ecole de Medecine III*, No. 53, 1836, Paris (de l'Imprimerie de Didot le Jeune)—and reports cases with necropsies.

H. Romain Davalis, in his *These Considerations Fievre Intermittente Simple, De L'Ecole de Medecine*, Paris, 1836, No. 66, page 21—says "L'Endocardite, la pericardite, l'endo-pericardite, accompagnent tressouvent le rhumatisme articulaire aigu; la grande majorite' des maladies du coeur sont la suite de cette derniere affection qui a persiste' quelque temps".

Time and space will not permit to enter into an extended discussion of the various explanations and etiologic factors given for the occurrence of chorea. It is, however, almost universally agreed that rheumatism, or rheumatic infection (streptococcal infection and toxemia) is certainly closely followed or often complicated by chorea.

R. Lenz (Wien. Arch. f. inn. Med. 21: 95-126, 1931) discusses the problem of rheumatic chorea. "Rheumatismus infectiosus" may occur in many children without definite preliminary joint involvement. The first signs of trouble may be endocarditis or chorea, with a history, perhaps, of a recent attack of tonsillitis.

Lenz, Blazek, Franke, Mayer, v. Schopf, Gottstein, Dennett, Tisdall, Cunningham, Gerstmann, Poynton and Schlesinger, Gottlieb, Beck, Lande', Pilcz, Lesigang, Ashby, Lowenburg, Goldstein, Jones and Jacobs (1932), and others have recently been using *Nirvanol* in the treatment of chorea.

Lenz reports two cases recently treated by him and concludes: "The disease picture of rheumatic chorea develops in the presence of a general predisposition for the disease in the central nervous system which regulates the movements." His series consisted of 27 cases.

Warner and Hampson (*Lancet*, I, No. 5860, p. 397, Feb. 20, 1932) reported favorable results from the use of parathormone and calcium. They emphasized the importance of looking for a reduction in the calcium of the cerebro-spinal fluid. Corresponding with the low cerebro-spinal fluid calcium values in chorea there was found to be a raised phosphate value. They recommend parathormone as a valuable drug to use in bringing about a calcium rise and a fall in phosphate. In resistant cases of chorea they state, an adequate amount of Vitamin D and ultra-violet light are needed. From 75 to 80% of cases of chorea, according to these authors, were benefitted by parathormone, some of them strikingly so. In the first twenty cases the chorea ceased in four and one half weeks, on the average. A girl, aged 11, had such severe chorea that she rubbed through three sheets within twenty-four hours of admission, but under treatment the chorea had gone in sixteen days.

Lenhart, of Budapest, used Lilly's parathormone injections because of a hypofunction of the parathyroids in chorea minor (*Deutsch. Gesells. f. Kinderheilk*, September 23-26, 1931, Dresden). It appears that hypofunction of the parathyroids before three years produces tetany, later chorea. The urine in cases of chorea, just as in cases of tetany, contains increased amounts of guanidin. Guanidintoxicosis, experimentally produced in animals, brings about choreiform movements. According to L. Doxiades, of Berlin, there is hypotony of the skeletal muscles in chorea—a disturbed muscle tonus.

Lucy Porter Sutton, of Bellevue Hospital, New York, (*J. A. M. A.* 97: 1929, Aug. 1, 1931) has had favorable results in the treatment of chorea by the induction of fever with *typhoid-paratyphoid* vaccine, given intravenously, in



many cases. The average duration after treatment was started was from 8-9 days. This is much more satisfactory than nirvanol (phenylethylhydantoin).

J. C. Small, of Philadelphia, and others, have for the past four or five years, treated acute rheumatic fever and chorea with streptocardio-arthritis serum and antigen. Good results have apparently been obtained in many cases. In chorea, *parathormone injections* and calcium may be given with the streptococcic vaccine or Small's serum and antigen.

Swift, Hitchcock, Derick and McEwen (Trans. of Assoc. Amer. Physicians, XLV, pp. 247-260, 1930) and May G. Wilson and Swift, of New York City, have studied the effects of intravenous vaccination with *streptococci* in rheumatic fever and on the prevention of relapses in children with rheumatic fever. Their results seemed very encouraging. Wilson and Swift have found that the use (intravenously) of streptococcic vaccine in the rheumatic children, studied over a period of three years, showed only one-half the number of relapses when compared with the control group. This improvement they attributed to intravenous vaccination with hemolytic streptococci. The vaccine was a heat-killed culture of a hemolytic streptococcus—Strain Q 33—suspended in 0.5 per cent phenolized normal salt solution, so that 1 c.c. represented the required dose. The first injection consisted of 250,000 microorganisms, and each subsequent injection contained double the number of that preceding until the maximum of 10,000,000 was reached: and this dose was then repeated until a total of from nine to twelve treatments had been given. In the presence of distinct febrile or toxic reactions the dose was not increased so rapidly. Attacks of chorea, polyarthritis, and carditis were distinctly lessened.

In a recent report Wilson and Swift ("Intravenous Vaccination with Hemolytic Streptococci"—Amer. J. Dis. Child. 42: pp. 42-51, July 1931)—state that "forty-five per cent of the treated children as compared with eighteen per cent of the controls were free from recurrence for periods of from sixteen months to two years after treatment".

Hitchcock, McEwen and Swift (Amer. J. Med. Scs. 180, No. 4, p. 497, Oct. 1930) have found that the use of *antistreptococcic serum* treatment of patients with rheumatic fever in no way replaced the long-established therapy of rheumatic

fever, nor should it be universally adopted. "The unpleasant reactions have not been outbalanced by a reciprocal certainty of therapeutic benefit". Schleiter, of Pittsburgh (Bulletin Penna. Heart. Assoc. II, No. 2, April 1932) reviews the recent work by Wilson and Swift, etc., and concludes "that biologic products for the treatment of rheumatic fever are not as yet available nor their value definitely proved."

Swift and his co-workers in the belief that the clinical manifestations of "rheumatic fever" represent the allergic response of a subject sensitized, by previous infection, to certain strains of haemolytic streptococci, they attempted to desensitize the subject after the first attack, thus reducing the incidence and severity of the illness.

Tolstoi and Corke (Jour. Lab. & Clin. Med. XVII, No. 5, p. 450, Feb. 1932) have found magnesium oxide in combination with magnesium cinchophen (magnephen) an effective antipyretic and analgesic in the treatment of rheumatic fever. It produces symptomatic relief, altho it does not influence the activity of the rheumatic virus.

J. D. Hindley-Smith (Brit. J. Children's Diseases XXIX, p. 25, Jan.-Mar. 1932) in his paper on "Chronic Streptococcal Toxaemia" treats "chronic rheumatism" as a symptom, and analyzes four hundred cases. He states "chronic streptococcal toxemia" as a disease which is very widespread and appears to be on the increase and that there is a condition of *allergic sensitization* at work in these cases in addition to the streptococcal infection and that treatment with specific autogenous vaccines brings success.

Poynton and Schlesinger also believe that there is an allergic factor in these cases—a type of cell sensitization which makes it possible for the streptococcus to produce the reaction only in cases which have become susceptible to the streptococcal action.

Master and Romanoff ("Treatment of Rheumatic Fever Patients with and without Salicylates"—J. A. M. A. 98: No. 23, pp. 1978-1980, June 4, 1932)—gave thirty-three patients adequate salicylate therapy and thirty controls who did not receive salicylates. In the rheumatic fever patients, whether or not salicylates were administered, a one hundred per cent involvement of the myocardium was found. They conclude that "there is no evidence that salicylates prevent cardiac complications or shorten the

duration of hospital stay, although salicylates are at present the most efficient antipyretics and analgesics for the treatment of acute rheumatic fever".

Debre' and Uhry (Paris Medical, 2: 394, Nov. 7, 1931) state that the Meynet rheumatismal nodules are found in the subcutaneous cellular tissue and do not adhere to the skin. They suggest that in cases of Bouillaud's disease or chorea, we should not fail to pass the hand over the vertebral column and the occipitoparietal and scapular regions in the search for Meynet's nodules to confirm the diagnosis of the disease. These nodosities are often seen as prominences, but more often are palpable as small, round, spherical or oval, at times discoid, tumors of firm, dense fibrous or even cartilaginous or bony consistency. They vary in size from that of small grain to a large nut. They are frequently quite numerous, found mostly on top of the skull, along the vertebral apophyses, and the level of the scapula and in the joints of the knees, elbows, and fingers. Rheumatismal nodules in the occipital region are difficult to distinguish from enlarged lymph nodes, which are also frequent in this region in children. These Meynet nodules are to be differentiated from the cutaneous erythematous and painful nodules of endocarditis lenta.

#### MENINGITIS

In recent publications have appeared reports of recoveries from such serious and usually fatal conditions as pneumococcic, streptococcal, influenzal and tuberculous meningitides, and various severe forms of otogenic meningitis.

Evidently, the many instances of recoveries now found reported in the literature, especially since the late great World War, are no doubt due to progress and improvement in the methods of treatment, altho some of these patients, with Heavenly help, have gotten well with practically no treatment except spinal drainage. Some have recovered following intracisternal and intraspinal injections of pneumococcic, influenzal or streptococcic and scarlatinal sera, at times combined with intravenous and intraventricular injections. In others, the use of various antiseptic dyes, intravenously, intrathecally, and even injections directly into the carotids have been tried.

One might recall, here, that it was Robert Whytt (1714-1766) who probably first described

tuberculous meningitis in children ("Observations on the Dropsy in the Brain", 1768).

Antoine Charles Lorry (1725-1783), of Paris, did a series of *suboccipital* and spinal punctures in dogs and cats, and concluded the medulla is the seat of vital functions, including the center of respiration.

Elisha North (1771-1843), of Goshen, Connecticut, published the first book on cerebrospinal meningitis ("spotted fever"),—(in which he recommends the use of the clinical thermometer, 1811).

William G. Gerhard (1809-1872), of the University of Pennsylvania, published the first accurate clinical study of tuberculous meningitis in children (Amer. J. Med. Scs. 1833-4, *XIII*, 313; 1834, *XIV*, 99).

The first accounts of cerebrospinal meningitis were published by Gaspard Vieusseux (1746-1814) at Geneva, 1805—(Jour. de Med., Chir., Pharm., etc., Paris, 1805, *XI*, 163-182).

The cause of cerebrospinal meningitis was discovered in 1887 by Anton Weichselbaum (1845-1920).

It was in 1774 that Domenico Cotugno (1736-1822) discovered the cerebrospinal fluid (and in 1764 he demonstrated albumin in the urine by boiling, which was first demonstrated in 1694 by Frederik Dekker).

Appelbaum, of Bellevue Hospital, New York, (J. A. M. A., 98: 1253-1256, April 9, 1932) reported three cases of recovery from streptococcic meningitis. Ersner (1932), of Philadelphia, recently reported recoveries from otogenic streptococcic meningitis following intracarotid injections of 1/2 per cent neutral acriflavine and Pregl's iodine in 10 c.c. doses. Among other recoveries recently reported are those by Leishman (1931), Neal (1927, 1930), Lang (1928), McCarthy (1927), Huenekens and Stoesser (1927), Rosenberg and Nottley (1931), Urbantschitch (1926), and others.

Rosenberg and Nottley ("Recovery from Streptococcic Meningitis"—Ann. Int. Med. 4: 1154, March 1931) reviewed the literature on the subject and collected forty-one recoveries.

Including Peabody's case (1908), the three cases reported by Applebaum, Leishman's (Canad. M. J. 24: 424, March 1931) case, and the two cases reported by Ersner (1932), there are probably fifty authentic recoveries on record based upon the studies of the literature made by Rosenberg and Nottley and Appelbaum.

Kolmer (Intracarotid Treatment for Meningitis with Recoveries—J. A. M. A. 96: 1358, April 25, 1931), recommended the intracarotid injections of antistreptococcic serum and some chemical dye, combined with intracisternal and intraspinal therapy and drainage of the spinal fluid.

Spontaneous recovery from pneumococcic meningitis (type III on repeated culture) after spinal tapping occurred in a colored baby at the West Jersey Homeopathic Hospital, Camden, New Jersey.

So that (Brieger, 1912 and Dandy, Dec. 1924) the possibility of spontaneous recoveries (with simple spinal drainage) at times in some apparently "hopeless" cases, should always be kept in mind.

Josephine B. Neal, of New York, had two recoveries (after scarlet fever) following the use of antiscarlatinal serum.

Patzig (1922), Netter (1909), Vining and Thompson (1924), Tedesco (1911), and others reported prompt improvement after simple spinal taps.

In a study of the literature several years ago (International Clinics, III, pp. 155-219, Sept. 1927, Phila.) the writer found about one hundred and fifty cases of recovery from pneumococcic meningitis. There are perhaps sixty or seventy cases of recovery from tuberculous meningitis on record. Recently, nine cases of recovery from influenzal meningitis, in patients aged from one to thirty-three years, were reported by F. Roy (Thèse de Paris, No. 525, 1931), altho the mortality rate in infants is ninety-six per cent.

In addition to the spinal drainage and specific therapy, other measures of treatment have been tried. Thus, Kennedy and Worts (J. A. M. A. 96: 16, 1931) have outlined a method of treatment of increased intracranial pressure, including lumbar puncture, the administration of dextrose solution intravenously two or three times daily, injections hypodermically of caffeine sodiobenzoate every four hours, and decompression, if necessary. Denker (Am. J. M. Scs. 181: 675, 1931) believes caffeine reduces intracranial pressure by its effect on the heart (circulation), respiration (respiratory stimulant, according to Binz, Cushny, Sollman and Pilcher, and others) and kidneys (a potent diuretic, causing "dehydration" and reduction in brain bulk with reduced spinal fluid pressure). Caffeine, perhaps, by its respiratory stimulant ef-

fect, causes a blowing-off of carbon dioxide, with its resultant mild alkalosis and decreased rate of secretion of cerebro-spinal fluid and consequent reduction in pressure.

Prof. Z. von Bókay, of Debreczen, Hungary (Jahrb. f. Kinderh. 1932, CXXXV, 69), reports success in five proved cases of tuberculous meningitis treated with deep X-rays between May and August 1931. The ages were 12, 6, 4½, 3, and 3 years. Diagnosis was confirmed by either finding the bacilli in the cerebrospinal fluid or by the positive result of inoculating the fluid into a guinea-pig. X-ray was applied to the base of the neck, forehead, and temporal regions. Three to four applications were made in each case, with one to two days between the first two applications, and three to four days between the subsequent applications. A complete recovery took place. The irradiation employed is described as follows: 162 kilovolts, 4 milliamperes with 0.25 of zinc and up to 3mm. of aluminum filter, 150-200 R. units with a focal distance of 34 cm. Loss of hair appeared to be the only deleterious result of the irradiation. The subsequent development of hydrocephalus or mental deficiency or other possible sequelae must be considered. In twelve other cases of tuberculosis meningitis, X-ray therapy failed completely.

Finally, with Ochsner, let us also "pray"—for we must, in this forest of all kinds of diseases and many forms of treatment, "leave something to God."

#### CARDIO-VASCULAR DISEASES; ANGINA PECTORIS

##### AND HIGH BLOOD PRESSURE

Erasistratus (310-250 B. C.), of Keos (Iulis) saw the heart clearly as a pump and understood the circulation (reversed) and described the aortic and pulmonary valves and chordae tendinae. He explained angina and dropsy as caused by hyperemia (plethora). Diogenes described the blood vessels going to the left ventricle of the heart and he described the vena cava with its main branches. Herophilus, of Chalcedon (4th century B. C.) counted the pulse with a water-clock, and analyzed its rate and rhythm.

The "Prince of Physicians", Avicenna (or Ibn Sina, 980-1037), who was chief physician at the Bagdad Hospital, wrote some facts on the heart translated by the Catalan, Arnold, of Villanova, (1235-1311). (Avicenna was among the



first to describe the preparation and properties of alcohol.)

Leonardo da Vinci (1452-1519) discovered the atrioventricular band in the right heart and described the valves, muscles and vessels of the heart. He was one of the several near-discoverers of the blood circulation. He described *arteriosclerosis* of the blood vessels in a centenarian at the necropsy, performed in the Hospital in Florence (Dell'-Anatomia Fogli B, 10). The term "*arteriosclerosis*" was introduced by Lobstein in 1833.

R. Vieussens first described aortic insufficiency (1695) and mitral stenosis (1705). Vieussens probably first correctly described the course of the coronary vessels.

Mitral stenosis was noted by John Mayow (1640-1679) in 1669, and Vieussens in 1715 described pathologically, mitral stenosis and aortic insufficiency. In 1703 William Cowper described the change in the aortic valves, while L. Riverius (1589-1655) in 1646 first noted aortic stenosis, later also studied by Vieussens.

Andrea Cesalpino (1524-1603), Professor at Pisa, (Cesalpinus 1571-1593) knew that the heart in systole sends blood into the aorta and pulmonary artery, and in diastole receives it back from the vena cava and pulmonary vein. However, unlike William Harvey (1578-1657) he performed no convincing experiments, as reported by the credited discoverer of the blood circulation, "De Motu Cordis" (Frankfort, 1628).

Johannes de Ketham (Johann von Kirchheim), in his *Fasciculus Medicinæ* (Venice, 1491) wrote on venesection and Libavius (1546-1616) suggested blood transfusion (1615).

Michael Servetus (1509-1593), or Miguel Servete, discovered that the blood in the pulmonary circulation passes into the heart, after having been mixed with air in the lungs (*Restitutio Christianismi*, 1553). Aurelius Celsus, who lived in the time of Tiberius Caesar, in his 'sanguis cursus revocetur' partly foretold the blood circulation.

R. Vieussens (1641-1716), Professor at Montpellier, studied the position, structure, and pathology of the heart (1695-1715) and, in his numerous necropsies, he noted the relation of heart disease to asthma and hydrothorax (1672-1676). Niels Stensen (1648-1686), in 1664, recognized

the muscular nature of the heart. H. Boerhaave (1668-1738), in 1728, described a case of dilatation of the heart. Antonio Scarpa (1747-1832) was the first to regard arteriosclerosis as a lesion of the inner coats of the arteries. William T. Porter (1862) did some research work on the coronary arteries (1893-1896). It was Rudolf Virchow (1821-1902) who, in 1846-1856, created the doctrine of *embolism* and was the first to recognize cerebral and pulmonary embolism and in 1856 demonstrated the embolic nature of the arterial plugs in malignant endocarditis. (In 1861 Virchow gave the name "*arthritis deformans*" to rheumatic gout).

The memoirs of the Earl of Clarendon (1632), three hundred years ago, contain a report of a case, his own father, of angina pectoris. John Hunter (1728-1793) died of angina pectoris. William Heberden (1710-1801) wrote on angina pectoris (1768), analyzing twenty cases, giving a classic account of the condition. Heberden's work on angina was followed by Parry's (1799) and Edward Jenner's observations. Aureolus Theophrastus Bombastus von Hohenheim or Paracelsus (1493-1541), according to Haberlandt (1930) used prepared calves' heart muscle (broths) in cases of heart disease.

The philosopher Seneca (4 B. C.—65 A. D.) was tormented with stormlike attacks of *angina pectoris* with the sense of impending death—"meditatio mortis"—which he describes in his 54th letter to Lucilius.

William Harvey, nearly 300 years ago, also described a case of *angina pectoris* and *aortic* (coronary) *disease* in his *Works*, particularly in his Letter to J. Riolanus, defending his "De Motu Cordis"—(*Opera Omnia, Londinensi Edit*a 1766, *Exercitatio Altera ad J. Riolanum*, pages 113 and 127.).

Organotherapy was used in unscientific manner three thousand years ago. Hippocrates (460-370 B. C.) used organ tissue for relief of corresponding organ diseases. Celsus (20 A. D.) recommended healthy animal organs for relief of diseases of corresponding organs in man, as did also Dioscorides, (60 A. D.)

Julius Preuss (1911), in his *Biblich-talmudische Medizin*, pages 204-205, discusses Talmudic references to heart disease. He states Aristotle believed the heart can never be seriously diseased, and that Aretaeus taught that when

the heart becomes diseased, death follows quickly. Aristotle (384-322 B. C.) believed that the heart consists of three chambers, two ventricles, and the left auricle, and was the origin and central organ of the circulation, and that the heart and blood vessels beat together.

Probably the first treatise on the pulse was written by Aegimus, of Elis, before Hippocrates. Praxagoras (330 B. C. ?) was, perhaps, the first physician who distinguished arteries from veins, more clearly than Hippocrates and who carefully studied the pulse. Herophilus, his pupil, followed him with an extensive treatise on pulsation. Chrysippus noted the value of the pulse rate as an indication of fever. Galen knew that the heart was the centre and source of pulsations. Harvey was the first physiologist to identify the beat of the heart with the systole, as he had a rare opportunity to discover during life in the exposed heart of Lord Montgomery. Hales, a hundred years after Harvey, (with some aid from Torricelli) conceived the function of the heart in maintaining the systemic blood pressure.

The pioneer in graphic study of cardiac irregularities was Sir James Mackenzie (1853-1925). He first differentiated "*nodal rythm*" (1902-8), which Sir Thomas Lewis (1881) called "auricular fibrillation" (pulsus irregularis perpetuus). In 1910 Mackenzie demonstrated the value of digitalis in auricular fibrillation. Bouillaud, in 1835, called digitalis a "true opium of the heart." In 1906, by means of long wires laid between the hospital and his laboratory, Einthoven took cardiac tracings (Leyden) at a distance of a mile. William Withering (1741-1799), of Shropshire, England, in 1776, learned that foxglove (digitalis) was good in dropsy. In his classical account of foxglove (1785) he protests against the abuses of digitalis. He did not distinguish between cardiac and renal dropsy. Since Withering's introduction of digitalis, workers have been busily occupied searching for newer and better remedies for the treatment and alleviation of many of the cardio-vascular-renal diseases.

In recent years studies have been made in the use of various tissue or organ extracts in the treatment of spasmodic vascular conditions, angina pectoris, hypertensive diseases, and various forms of arterial disease.

Schafer and Moore (Jour. Physiology XX, I, 1896) noted a fall of blood pressure as the re-

sult of injection of brain extracts. Mott and Halliburton (Feb. 1899) suggested that the active depressor substance was choline. Osborn and Vincent (1900) showed that extracts of nervous tissues cause a fall in blood pressure. Swale Vincent and F. R. Curtis (June 12, 1926) studied the nature of the depressor substances in tissue extracts. While choline, (dicholine anhydride), histamine, etc., have something to do with the depressor effect, it is so slight that they believe that some substance in tissue extracts which is neither choline or histamine is the important responsible factor. Osborn and Vincent felt choline could not be entirely responsible for the depressor effect. Vincent and Sheen (1903) showed that not only nervous tissue extracts but all tissues of the body had depressor effect, except the adrenal and pituitary.

In 1918 Marfori found that lymphatic glands contain a depressor principle. McDonald (1925), and James, Laughton and Macallum (Science, LXII, P. 181) reported a depressor substance in liver extracts.

Schafer and Moore (Jour. of Physiology, London, XX, i, 1896 P. 1,) were the first to observe that an extract of brain substance, when intravenously injected, "is usually followed by a fall in the blood pressure."

Osborn and Vincent (March 3, 1900), mentioned above, expressed the belief that depressor effects of brain tissue extracts (especially grey matter) are not due to choline, "although present in small amount, it must be excluded as the active principle." They showed (Jour. Physiology, XXV, pp. 283-294, No. 4, April 24, 1900) that extracts of nervous tissues cause a fall in blood pressure, obtained even after section of both vagi and after full doses of atropine.

Drury and Szent-Gyorgi (1929) found that adenylic acid and adenosin caused a fall of blood pressure. Adenylic acid is present in the blood in skeletal muscle, in heart tissue, in the brain and in the kidneys (J. Physiology 78: 213, 1929).

Major and Weber, in their paper "Further Observations on the Depressor Substance in Brain Tissue" (1930) present additional evidence to show that the depressor activity of certain brain extracts is not due to histamine, choline, or acetyl choline. Their purified brain extracts contain no histamine, and so their depressor effect is not due to histamine.

Dale states histamine is a very powerful and highly toxic depressor substance and is known to be present in most of the tissues of the body. Acetyl choline isolated by Dale and Dudley (1929) is relatively unstable—it is a very powerful depressor substance, one thousand times as powerful as choline. Pacyl tablets (acetyl choline) are being used in Europe by some physicians for high blood pressure.

Major (1932) states that, after studying the depressor effects of liver extracts the past four years, they now feel that they have definite evidence of the existence of a depressor substance in the tissues which is neither histamin, cholin, nor acetyl cholin. Major and his co-workers have isolated a depressor substance from brain tissue, in the blood of muscle tissue, etc. Major (Am. J. M. Scs. 182: No. I, pp. 81-87, Jan., 1932) states "several depressor substances have been demonstrated in the body. Histamin, cholin, acetocholin, adenylic acid and adenosin have been definitely isolated. There is, in addition, another substance with powerful depressor action which has not been identified, but which is apparently widespread in the body." Only one *pressor* substance (adrenalin) has been positively demonstrated. He finds that *glycocycamin* is a powerful depressor substance, it is relatively nontoxic, effective when taken by mouth and causes a marked increase in the coronary flow as shown by Ginsberg and Stoland (Jour. Pharmacol. & Exp. Therap. 41: 195, 1930).

*Glycocycamin* is guanidin acetic acid. Karashima (1928) has described *glycocycamase*, a ferment in the liver capable of oxidizing *glycocycamin*.

Dale and Dudley (Jour. Physiology, 68: 97, 1929) have studied the presence of *histamine* and *ancetylcholin* in the spleen of the ox and the horse.

In 1927 (Jour. Physiol. 62: 397, 1927) Best, Dale, Dudley and Thorpe studied the nature of the vasodilator constituents of certain tissue extracts.

It is interesting to note that Major (Jan., 1932) says *tyramin* produces a marked elevation in blood pressure and is absorbed readily from intestinal tract. This substance may be rendered innocuous by the production of *tyraminose*, a ferment in the liver (M. L. C. Hare, 1928) capable of destroying tyramin. Guanidin and methyl guanidin are also *pressor* substances.

Cohn and Minot (1927) produced a *liver frac-*

*tion* free from protein or polypeptide, (*used in anemia*), but this, when given intravenously, has a slight depressor effect. Castle and Taylor (1931) used this fraction in quantities equivalent to 100 gms. of liver (nontoxic) and was effective in cases of anemia where the oral liver extract was not satisfactory.

Major and Weber, in 1929, studied the depressor substances, histamine, choline, and a third "X", (Adenosine?) unidentified substance in extracts of liver, lung, and brain.

Maestrini (Riforma med. 1662, 1928) used by mouth, extracts of atrioventricular nodes (bands) of beef hearts with good results in myocarditis.

Haberlandt (Das Herzhormon, Jena, 1930), of Austria, has used heart muscle extract; J. S. Schwarzmann, of Odessa, has used skeletal muscle extract (myoston); Zuelzer, of Berlin, has used eutonon (liver preparation); Vaquez and his co-workers, of Paris, have, for the past three or four years, been using *angioxyl* (deinsulinized pancreatic extract); Nuzum, of Santa Barbara; H. I. Goldstein, J. B. Wolffe, and others have tried a deinsulinized pancreatic tissue extract (desympatone), made in Philadelphia by Sharp and Dohme.

Other similar preparations, such as padutin (kallikrein), lacarnol, myol, etc., have been used in European Clinics, with varying results, in the treatment of vascular spasms, angina pectoris, high blood pressure, endarteritis, intermittent claudication, etc.

P. Fleischman, Zuelzer, Krayner, Crayer, Hans Kohn, von den Veldon, Posner, Rosin, Guschewski, and Rosenberg discussed the treatment of circulatory disturbances with organ and muscle extracts before the Verein für Innere Medizin, Berlin, November 2, 1931. Among the preparations mentioned were lacarnol, padutin, eutonon, hormocardiol, carnigen, and *adenosin-phosphoric acid*. (Klin. Wochens. No. 51, X, pp. 2370-2371, Dec. 19, 1931).

Fritz Lange, of Munich, used chiefly kidney extracts. He tried extracts of spleen, lung, kidneys, stomach, bowel, liver, testes, pancreas, brain, heart and skeletal muscle. (Münchener Medizin. Wochens. 77, No. 49, pp. 2095-2097, Dec. 5, 1930).

Felix and v. Putzer-Reybegg (Feb. 8, 1932) studied organ extracts in II. Medical Clinic, Munich. Lange made his studies in Romberg's I. Medical Clinic.



Zipf experimented with adenosin-phosphoric acid (*Zeitschr. f. angew. Chem.* No. 46, p. 1013, 1930).

Rénon and Martinet, two French physicians, in 1921, reported the use of heart extracts in the treatment of cases of cardiac insufficiency, antedating the work of Mouzon (1928), Demoor (1928, 1929), and Haberlandt (1929, 1930). Haberlandt (*Das Hormon der Herzbewegung*, 1927, Vienna, and Berlin) has tried to prove the existence of a definite "heart hormone."

Lacarnol and angioxyl are given by mouth and by injections. Desympatone (Sharp & Dohme, Phila.), padutin (kallikrein), myoston, and eutonon, are used by injections, 1 - 2 c.c. doses or more. *Myoston* and *eutonon* (Promonta, Hamburg) are also administered by mouth in 15, or 20 drop doses, two or three times a day, as indicated. Extraordinarily good results have been reported in the literature by many overenthusiastic workers. It remains for the future, however, to be better able to properly evaluate the benefits derived from the use of various tissue extracts, adenylic acid, adenosin, and other similar preparations in the treatment of angina pectoris, high blood pressure, angiospastic conditions, endarteritis, coronary disease, and intermittent claudication. (Rénon, *L.-Bull. Acad. de Méd.* 89: 707, 1921; Martinet-*Bull. Acad. de Méd.* 87: 701, 1921 and *La Presse Méd.* 483, 1921; Mouzon, *L.-La Presse Méd.* No. 37, 1928; J. Demoor-*Bull. Acad. de Méd. de Belgique* 882, 1928 and *Annales de Physiol. et Physico-Chimie Biologique* No. 1, 5, 1929).

In the American Journal of Physiology (May, 1931) Dragstedt and Owen and Owen and Ivy, of the Northwestern University Medical School, have studied the diuretic action of secretin preparations. They used vasodilatin (desympatone, S & D) and preparations made in their own laboratories. It is evident that the presence in the pancreatic tissue extracts of vasodilatin is necessary, for the diuretic action to occur; they conclude the diuretic effect of secretin preparations is dependent upon their secretory stimulation of pancreatic juice and bile and only occurs when these secretions have access to the small intestine.

G. Zuelzer—"Cardiac Hormone Question"—(*Medizin, Klinik*, 24: 571-575, 1928; and *Med. Welt*, 3: 304-307, 1929); Vaquez, Giroux, & Kisthinos (Action of Pancreatic Extract, "Angi-

oxyl," in *Treatment of Angina Pectoris—Presse Medicale*, 37: 1277, Oct. 2, 1929); McDonald (*Proc. Soc'y. Exper. Biol. & Med.* 483-485, 1925); Nielsen (*Heart Hormone, Lacarnol—Ugeskrift for Laeger*—93: 240-243, March 5, 1931); Rubensohn (*Heart Hormone-Eutonon, Med. Klinik* 26: 1483-1484, Oct. 3, 1930); Quisenne (Pancreatic medication in chronic vascular disturbances, *Paris Medical* 19: 156-158, August 17, 1929); Fahrenkamp & Schneider (*Heart Hormone and Carnigen in Angina Pectoris-Med. Klinik*, 26: 48-50, Jan. 10, 1930); Vaquez, Gley and Kisthinos (*Comptes Rendus, Séances et Mém. Soc. de Biol.* 100: 1088-1089, April 20, 1929); Gley and Kisthinos (*Wien. Klin. Woch.* 43: 1530-1536, 1930); Westenbrink and Arons (*The Heart Automatin-Nederlandsch Tijdschrift v. Geneeskunde* 73: 798-800, Feb. 9, 1929); Chabanier and Truchot (Hypertension with Cardiac (left) Insufficiency, Treated and Improved with Pancreatic Extract-*Bull. de la Soc. Franc. d'Urol.* (1929) 313-315, July 8, 1929); Nuzum (Pancreatic Extract in Angina Pectoris and Intermittent Claudication-*Trans. Sect. Pract. Med., A. M. A.*, pp. 92-109, 1931); Haberlandt—(*The Cardiac Hormone-Wien. med. Woch.* 81: 527, 529, 566, 571, 1931); J. S. Schwarzmann (Skeletal Muscle Extract in Angina Pectoris-Odessky *Med. Jour.* 4: 527-528, 1929); Brandenburg (Pancreatic Extract in Angina Pectoris-*Med. Klinik*, 25: 1788-1789, Nov. 15, 1929) and many others have contributed to the literature on the use of various tissue extracts in the treatment of angina pectoris, hypertension, and arterial diseases.

With this rapid progress in the treatment of disease and the recommended use of so many preparations in mind, one might recall with Oliver Wendell Holmes ("Medical Essays," Boston, 1883, pp. 378, 379): "There is nothing men will not do, there is nothing they have not done to recover their health and save their lives. They have submitted to be half-drowned in water, and half-choked with gases, to be buried up to their chins in earth, to be seared with hot irons like galley-slaves, to be crimped with knives like codfish, to have needles thrust into their flesh, and bonfires kindled on their skin, to swallow all sorts of abominations, and to pay for all this, as if to be singed and scalded were a costly privilege, as if blisters were a blessing, and leeches a luxury. What more can be asked to prove their honesty and sincerity?"

## THE VALUE OF DIET IN THE TREATMENT OF ARTHRITIS AND MIGRAINE\*

M. B. HOLZMAN, M. D.,  
Wilmington, Del.

For years clinicians have been puzzled as to the treatment of migraine and arthritis. They are two of the most unsatisfactory conditions that we have to contend with. I combine the two, because I am convinced that a great number of migraine sufferers develop arthritis after middle age. Let us discuss these conditions separately.

Migraine occurs either in childhood or early adolescence, usually in girls or boys of neurotic tendency. The symptoms in early life are entirely gastric. The child will awaken in good spirits, and for no apparent reason will complain of severe headache accompanied by retching and vomiting. The symptoms are identical with those of migraine occurring later in life, namely an anxious look, a blanching of the skin, and a feeling of extreme weakness that may last from a half-hour to two hours. When the attack is over, the child is in normal condition again, which causes a great many mothers to wonder whether this evident by-play has been deliberately put on in the hope of not having to go to school.

Migraine of the adult is very little different from the migraine occurring in early childhood, excepting that the patient has from one to two days of real buoyancy followed by one or two days of mental depression. Then comes the attack. First, a blanching of the skin, disturbance of vision, numbness of extremities, and vomiting followed by severe headache lasting from two to eight hours.

I believe that this condition is due to improper diet, which produces a toxin that disturbs the action of the internal glandular secretion so that in turn, it disorders the sympathetic nervous system. This is evidenced by the blanching of the skin caused by the sudden contraction of the end arterioles, congesting the internal organs, especially the stomach mucosa, and resulting in the nausea and vomiting very definite symptoms of this malady.

In taking histories, it appears that these cases in the female show a complete cessation of mi-

graine symptoms after the menopause, but in their place they develop arthritic symptoms. To me, arthritis, like migraine, is a disease caused by disturbances of metabolism. It has been proven repeatedly that infectious foci do not always produce arthritis. In their production of toxins, they may increase the susceptibility of a patient to arthritis, but they are not the cause of the disease per se. As proof of this, we have the cases in which every known infectious focus has been removed with no improvement in the disease.

Within the last two or three years, I have done considerable work in trying to treat migraine and arthritis with diet entirely. Following the theory that foods rich in protein and carbohydrates produce an acid ash, I therefore have partially eliminated protein and carbohydrate foods and have noticed an almost immediate improvement. It has been my privilege to follow up several such cases for a period of two years, and to find that they will get along very comfortably on a limited protein and carbohydrate diet with an abundance of fresh fruits and vegetables. I have then advised the same cases to go back to a heavy protein diet, and within a month either the migraine or the arthritic symptoms have returned.

The following cases substantiate my theory:—

Miss L. L., aged thirty-two, occupation school teacher, early history negative, menstrual period started at fourteen, had migraine headache on first flow and periodically every month until about twenty-fourth year. After that, migraine headaches appeared on an average of four to six times a month, becoming more frequent and more severe as she grew older. She consulted me fourteen months ago being warned by the school authorities that if she were to lose more time, she would be dismissed. I suggested several changes in her daily habits, entirely eliminated the proteins, reduced the carbohydrates, increased fresh fruits and vegetables, and the results were very encouraging. She has not had a severe headache since, has been absent from school only two days in the last semester and they were caused by her taking protein food.

\* \* \*

Mrs. E. B. F., aged twenty-six, occupation stenographer, early history negative, menstrual period started at twelve, had her first migraine headache at seventeen when first employed. Her history shows that she lived in the country and ate very little meat in her early life. When she came to the city to work, she partook of a great deal of meat, a quantity of pastry and hardly any fruit or vegetables. I regulated her daily habits, eliminated some protein foods, reduced

\*Read before the Medical Society of Delaware, Lewes, September 27, 1932.

the carbohydrates and increased the fruits and the vegetables, and as a result the migraine headaches ceased.

\* \* \*

Mrs. B. E. E., aged thirty-two, occupation librarian, early history negative, menstrual period started at fourteen, had her first migraine headache at sixteen, and thereafter regularly either before or after menstruation until twenty-one. From then on, there were headaches every day. In fact, she bought headache tablets in quantities of five hundred at a time, and took five or six tablets daily. Investigating her history, I learned that she had been eating only proteins and carbohydrates. I changed her diet to one consisting of eighty per cent vegetables and fruit. She is now entirely free of headaches.

\* \* \*

Mrs. E. B., aged thirty-eight, menstrual period started at fifteen, perfectly well until December, 1930, when she awoke with severe pain in the right knee. This subsided and she was well until June, 1931, when the pain recurred becoming so severe that on July 9th she started to use crutches. She visited two specialists who advised her to be patient as there was a possibility that she would never recover. When I saw her in August, 1931, she could not walk. I changed her diet and ordered her to bed. October 12th, she started walking, November the twenty-fifth she walked several blocks to keep a dinner engagement, by December she was practically well and has been well ever since.

\* \* \*

Mrs. F. M., aged forty-eight, early history showed headaches from about five years of age until fourteen, when her menstrual period started. The headaches ceased and she was perfectly well until three years ago when she had a severe pain in the right hip. In spite of constant medication, her condition grew worse. She consulted me eight months ago; I suggested changes in her daily habits and altered her diet. In July she went to the seashore and swam a quarter of a mile without any ill effects. She is apparently well now.

\* \* \*

Inasmuch as drugs have been entirely absent from the treatment of the cases cited, it is my hope and my sincere belief that I have been able to offer from an unusual angle some new ideas upon the subject we are discussing. This paper is not being presented as positive result of scientific research; it merely submits for your consideration facts that have evidenced themselves in the course of my own experience.

## Sleeping Sickness

Press article is authority for the information that 424 cases of sleeping sickness have occurred up to date this year in St. Louis, Missouri, with 54 deaths.

The disease is considered to be a form of encephalitis (lethargic), and not one of trypanosomiasis. It is usually more prevalent in the winter and spring months than at this time.

The United States Public Health Service also says that the outbreak is unusual in that the ordinary experience in respect of incidence by age groups is being reversed. Ordinarily it tends to be a disease of youth or early adult age; this outbreak appears to involve more severely the higher age groups, and among these the deaths are the most numerous.

The clinical picture is said to be that of a general febrile disturbance, often with vomiting; constipation or diarrhea; evidence of cerebral involvement (immobile facies, somnolence or coma); usually with a fairly stiff neck; headache (often the first and most pronounced symptom); pains in abdomen and legs; and tremor or simirigidity in the more severe cases. The tendon reflexes (knee, elbow and ankle) and superficial reflexes tend to be diminished or absent and may vary from day to day. The plantar reflexes may be extensor. There may or may not be a Kernig's sign. Some patients are very restless and have to be restrained. Irregular paralysis may occur, and transient hemiplegia is not uncommon. There is an increase of cell count on spinal puncture. The triad of symptoms is a febrile course, evidence of cerebral involvement, and mild meningeal signs. The duration of the febrile course is irregular and the temperature may be normal in a few days.

The incubation period is uncertain, apparently from five to twelve days, and the onset is sudden covering not more than one to three days. Apparently more females than males are attacked.

The precautions advised are those which would be taken in an outbreak of poliomyelitis of like intensity, including isolation of the patient for three weeks. Connected cases in the same family are rare. Drinking water has been excluded as a factor in the spread of the disease.  
Sept. 5, 1933.



## *The President's Page*

To the Members of the Medical Society of Delaware:

Gentlemen:—

Remember the 25th, 26th, 27th, of this month is your state convention. The House of Delegates meets on Monday the 25th at 8.30 P. M., at the Academy of Medicine building in Wilmington. For those who have not been there, it is at the corner of Lovering Avenue and Union Street. It is desirous that all be there as some very important matters will be taken up.

Since the last issue I have caused the arrest of the Natex man, a Mr. Driscoll, who has been holding forth in Eckerd's drug store in Wilmington. This, as you all have undoubtedly seen, has been about as blatant a fraud as has been imposed on the people in a great while. If you are not familiar with it, take the evening paper of Wilmington for the last few months and almost nightly a large Natex advertisement was seen. At first they were funny in the way they were printed, and always in the language of one who had bought some of the highly touted stuff. But I secured a very clever private detective, and we picked out all the symptoms for which the stuff was advertised and sure had a sick man when we were thru. He presented himself to "Dr." Driscoll, as he addressed him, and stated his symptoms. He was told that there were three strengths, but as he was so sick he needed the triple strength. The bottle cost him \$3.29, which he purchased after having been given a sample taste. Playing dumb, Mr. Driscoll even signed directions for him. So there would be two witnesses Mr. Hogue took Mr. Lenhoff along, and Mr. Driscoll tried also to sell him but did not succeed. I am sure the court will convict him. The part which is very annoying is the fact certain of our drug stores take part in this. I am informed by a former employee of this drug store that \$32,000 was taken in on one such advertised medicine.

We have heard no more from the cancer cure man in Dover. If anyone knows him to be active, please let us know.

The N. R. A. has no Code to offer for our profession, and it will never be possible to so offer, but I wonder if all those who are working the Code for others and all of the ones benefited by it ever even think of the doctor! It would be gratifying if we could evolve a code by which we were guaranteed our pay. From the way we all talk when we are together it sounds as if the old trick of let the Doctor wait is as bad as ever.

Now once again, all out for the State meeting, the program of which is in this issue. Hoping to see you there,

Sincerely,

W. H. SPEER, M. D.

# EDITORIAL

## DELAWARE STATE MEDICAL JOURNAL

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### OUR ATTITUDE TOWARD THE N. R. A.

The Journal of the American Medical Association in its Editorial of September 2nd, 1933, has clearly defined the status of the physicians and hospitals in the activity of the National Industrial Recovery Act. It is obvious that most hospitals operate, not for the purpose of profit, but to give service to the people who are in need of such. Wherever the hospital budget permits the institution to live according to the ruling of the National Recovery Act, it would seem feasible for the good of humanity for such an institution to live accordingly, but wherever such a procedure would handicap the staff in giving proper care to needy citizens, the next best step

would be for such institutions to deal with the individuals of these organizations who are complying with the National Recovery Act Principles, going under the consumers' Blue Eagle, thereby helping the Government in its attempt to stabilize the Country. From time immemorial, the physician has been support of ideal life, not only individual but social. The Country is now socially ill and the physician must take his part in helping it to recover. It is obvious that no physician can be of great material assistance to a sick one unless the family or society of such can render the necessary physical comforts for the ill individual.

For the last four years a large group of our citizens has been idle, unable to pay for the services rendered to them or to their families by the physician. We doubt very much that there are any reputable physicians in our state who have refused service to such. Because of this idleness and uncertainty of the future, the economic depression has created many unstable individuals among the large group of unemployed. Some of them have come to such a point that their former principles of patriotism and nationalism are lost. There is but one solution and remedy for such an attitude of mind, viz. to lessen charity and pure relief by creating more work, so that this vast group can again attain the satisfaction given by creative work; to give these men and women the formerly cherished right to work for existence rather than to ask for charity. It is hoped that the National Recovery Act will produce such a state, and it is the duty of the physician, who is a leader in his community, to back any movement which will tend to produce such an effect. The least any physician can do, at the present time, in the adjustment of the serious difficulties within our midst is, first, to back up with full force the President's Re-employment Agreement, and support every individual, or organization, who is complying with the National Recovery Act Prin-

ciples. Second, he should request the Governor and the leading state politicians to forget party lines and to get together and find means to give employment to the large group of skilled mechanics in this State, as well as the vast number of laborers who are without work.

Our Journal has complied with the N. R. A. Code by adopting the substituted provisions of this Code submitted for the Magazine and Periodical Industry. The Journal is also a member of the Periodical Publishers' Institute.

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#### 144TH ANNUAL SESSION

From 1789, when the Medical Society of Delaware was incorporated, till 1933, a span of 144 years, the Society has held, with few exceptions, an Annual Session. The program for this year is most attractive, and includes among the invited speakers some of the leading teachers of the East. Home talent, also, is well represented. The A. M. A. is represented by its President, a Trustee, and its Bureau of Investigation.

The Session will be held at the beautiful new Delaware Academy of Medicine, on Lovering Avenue, Wilmington, September 26th and 27th. The physician in Delaware who does not attend this Session is going to miss something good.

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#### Physicians, Hospitals and the National Industrial Recovery Act

Mr. Donald R. Richberg, general counsel of the National Recovery Administration, has given an opinion concerning the status of hospitals under the National Industrial Recovery Act. While it relates primarily to hospitals, it incidentally covers all professional men and organizations and all nonprofit organizations. Mr. Richberg says:

Hospitals, not engaged in carrying on a trade or industry, do not come within the purview of the National Industrial Recovery Act, so as to come under the ordinary requirement of a code of fair competition. There is nothing to prevent any employer of labor outside of trades and industries, any professional man or organization, or any nonprofit organization, from signing the President's Reemployment Agreement and conforming to its provisions. This does not mean, however, that they are under any compulsion to

do so other than that resulting from a desire to cooperate where appropriate, and so far as possible, with a general program of reemployment at shorter hours and higher wages. To the extent that labor is employed in occupations comparable with those engaged in trade or industry, it is of course desirable that similar conditions should prevail.

Outside of the trades and industries, therefore, a hospital, a professional man or organization and a nonprofit organization of any kind are under no legal duty to formulate and adopt a code of fair practice or to sign the President's reemployment agreement. With them the adoption of codes and the signing of the agreement are matters of circumstance and of patriotism. Whether a physician will or will not sign the President's reemployment agreement and display the official emblem in his office, on his automobile and elsewhere may, of course, be determined by the local medical organization in each community. Obviously, if a physician whose financial circumstances enable him without hardship to reduce the hours of his employees and to pay the wages specified in the President's reemployment agreement signs the agreement and displays the emblem, indicating to the public that he has done so, he may work an injustice on his financially less fortunate fellow practitioners. He would, perhaps, leave the public in doubt as to whether their failure to display the emblem is due to lack of patriotism or to lack of professional or financial success. His conduct certainly would not constitute fair practice, which, after all, is one of the prime objectives of the National Industrial Recovery Act. If all physicians in a community cannot without undue hardship sign the President's reemployment agreement and conform to its exact terms as they are written, a local medical society that desires to cooperate with the President without violating the principles of fair practice may follow either of two courses: under paragraph 14 of the President's reemployment agreement it may ask for a modification that will permit compliance without hardship, or it may advise its members to enroll under the consumer's agreement and to display only the consumer's emblem.—*Jour. A. M. A.*, Aug. 26, 1933.



**One Hundred and Forty-fourth  
Annual Session**

of the

**MEDICAL SOCIETY OF  
DELAWARE**

**1789-1933**

**September 26th and 27th, 1933  
Wilmington, Delaware**

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A. J. Strikol, P. W. Tomlinson, J. P. Wales.

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Miller, Paul R. Smith.

**Sussex County:**

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**Alternates**

C. L. Hudiburg, Bruce Barnes, G. Metzler, Jr.

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**Monday, September 25th, 1933**  
**Meeting of the House of Delegates**  
**Delaware Academy of Medicine**  
**8 P. M.**

1. Call to Order.
2. Roll Call.
3. Reading of Minutes of Last Session.
4. Appointment of Committee on Nominations.
5. Reports of Officers:
  - a. President.
  - b. Secretary.
  - c. Treasurer.
  - d. Councilors.
6. Reports of Standing Committees:
  - a. Scientific Work.
  - b. Public Policy and Legislation.
  - c. Publication.
  - d. Medical Education.
  - e. Hospitals.
  - f. Necrology.

Reports of Special Committees:

  - a. Woman's Auxiliary.
  - b. Cancer.
  - c. Syphilis.
  - d. Library.
  - e. Criminologic Institutes.
  - f. Medical Economics.
  - g. Tuberculosis.
7. Report of Delegate to the American Medical Association.
8. Unfinished Business.
9. New Business:
  - a. Resolutions.
  - b. Communications.
  - c. Appropriations.
  - d. Approval of Scientific Program.
  - e. Selection of Meeting Place.
  - f. Miscellaneous.
10. Adjournment.

**Essayists Taking Part in the Annual Sessions Are Requested to Make Careful Note of the Following:**

1. Papers read before the Society become the property of the Society. Each paper shall be deposited with the secretary when read. (Chapter X, Section 3, of the By-Laws).

2. Carbon copies are not accepted. Please turn in originals.

3. Double space all papers and leave plenty of margin, especially on first page.

4. No address or paper before the Society, except those of the President, invited guests, and orators, shall occupy more than twenty minutes in its delivery; and no member shall speak longer than five minutes, nor more than once on any subject, except by unanimous consent.

5. All members must be registered before they can participate in the proceedings and discussions of the general meetings. (Chapter III, Section 1, of the By-Laws).

6. *Essayists will please remember that all papers presented before the Society become the property of the Society and therefore are not to be published or submitted for publication elsewhere than in the DELAWARE STATE MEDICAL JOURNAL.*

**Tuesday, September 26th, 1933**

**General Session**

**Delaware Academy of Medicine**

**9:30 A. M.**

Invocation:

**Rev. Charles W. Clash, Wilmington**

Address of Welcome:

**Hon. C. Douglass Buck, Governor of Delaware**

Presidential Address:

The Future of the Medical Profession in the Next Twenty-five years

**William H. Speer, M. D., Wilmington**

Report of House of Delegates.

**SCIENTIFIC PAPERS**

1. The Etiology and Treatment of Acne Vulgaris

**—Allen D. King, M. D., Wilmington**

2. The Treatment of Acute and Chronic Injuries to the Brain.

**—Temple Fay, M. D., Philadelphia**

3. Cystitis: Its Cause and Treatment.

**—Newell R. Washburn, M. D., Milford**

**1 P. M.**

**Buffet Luncheon given by the New Castle County Medical Society  
Delaware Academy of Medicine**

**2 P. M.**

4. The Diagnosis and Treatment of Lesions of the Cranial Nerves

**—Walter E. Dandy, M. D., Baltimore**

5. Choice of Physician Under Workmen's Compensation Laws

**—Loyal A. Shoudy, M. D., Bethlehem**

6. Rocky Mountain Spotted Fever

**—Rolla Eugene Dyer, M. D., Washington**

7. The Family Doctor and His Responsibility to the Pre-tuberculosis Child.

**—Joseph P. Wales, M. D., Wilmington**

**Tuesday, September 26th, 1933**

**General Public Meeting**

**Hotel Du Pont**

**Ball Room**

**8:15 P. M.**

8. The Early Recognition of Cancer

**—Thomas S. Cullen, M. D., Trustee of the American Medical Association; Professor of Gynecology, Johns Hopkins University.**

9. Medicine, Past and Present

**—Alfred Stengel, M. D., Vice-President in Charge of Medical Affairs, University of Pennsylvania; Professor of Medicine, University of Pennsylvania.**



## 10. Pink Pills and Panaceas

—**Arthur J. Cramp, M. D., Director  
of the Bureau of Investigations, Amer-  
ican Medical Association.**

## 11. The Solution of Problems in Medicine

—**Dean DeW. Lewis, M. D., President  
of the American Medical Association;  
Professor of Surgery, Johns Hopkins  
University.**

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**Wednesday, September 27th, 1933**

**General Session****Delaware Academy of Medicine****10:00 A. M.**

12. Radium as a Therapeutic Agent  
—**Ira Burns, M. D., Wilmington**
13. The Treatment of Myoma Uteri  
—**Floyd E. Keene, M. D., Philadelphia**
14. Psychopathic Personality Among Children  
—**Claude Uhler, M. D., Farnhurst**
15. Prevention and Care of What is Called  
Old Age  
—**Charles P. Noble, M. D., Radnor**

**1 P. M.****Luncheon****Hotel Du Pont**


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**PROGRAM OF THE  
WOMAN'S AUXILIARY  
TO THE  
MEDICAL SOCIETY OF DELAWARE**

**Wednesday, September 27, 1933****10 A. M.****Hotel Du Pont**

Prayer.

Secretary's Report ..... **MRS. IRA BURNS**  
 Treasurer's Report ..... **MRS. I. J. MACCOLLUM**  
 President's Report, **MRS. ROBERT W. TOMLINSON**  
 Vice-Pres., Kent Co. .... **MRS. C. D. PRICKETT**  
 Vice-Pres., Sussex Co. .... **MRS. JAMES BEEBE**

**Committee Reports**

*Organization* ..... **MRS. GEORGE McELPATRICK**  
*Finance* ..... **MRS. HARRY BUCKMASTER**  
*Social* ..... **MRS. C. E. WAGNER**  
*Program* ..... **MRS. W. O. LAMOTTE**  
*Medical Welfare* ..... **MRS. LAWRENCE JONES**  
*Hygeia* ..... **MRS. WALTER LIEFIELD**  
*Editor* ..... **MRS. W. EDWIN BIED**  
*N R A* ..... { **MRS. IRA BURNS**  
                               **MRS. WILLARD PRESTON**  
*Card Party* ..... **MRS. W. O. LAMOTTE**  
*Nominations* ..... **MRS. HARRY BUCKMASTER**

Election of Officers.

Speaker ..... **MRS. FIELDING O. LEWIS**  
 President, Woman's Auxiliary Philadelphia County  
 Medical Society

Recommendations of President

**MRS. ROBERT W. TOMLINSON**

Resolutions—

Adjournment for Luncheon

**Social Afternoon****EXHIBITS****H. Pierce Brown, P. D. Wilmington, Del.**

**Cancer Exhibit by the Delaware Commit-  
tee for the Control of Cancer, New York  
City, N. Y.**

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## MISCELLANEOUS

### Problem of Medical Patents

Recently the question of the desirability of patents of products used in the field of medicine has been hotly debated. The Principles of Medical Ethics of the American Medical Association says specifically, "It is unprofessional to receive remuneration from patents for surgical instruments or medicines." It has been the pride of medicine down the centuries that it gave freely of its discoveries for the benefit of mankind. Jenner's contribution of vaccination against smallpox, Pasteur's method for the control of hydrophobia. Withering's contribution of digitalis, became the property of all who cared to use them for the prevention or treatment of disease.

As the science of medicine developed, however, new elements entered into its work and participated in its endeavors. Physicians began less and less to concoct their own remedies and to depend on the manufacturer of pharmaceuticals for the collection of materials and for their preparation and distribution. In an earlier day the physician who developed new devices or appliances manufactured a few with the aid of some neighboring blacksmith or carpenter. The modern physician is likely to delegate the manufacture to an industry capable of turning out thousands of units, in contrast to the ten or fifteen which might be used formerly. Greater dissemination of medical knowledge creates a greater demand for new drugs and new equipment. Moreover, the situation is complicated by the entrance into medical research of specialties associated with medicine yet not necessarily partaking of the ideals of the medical practitioner. Today the development of a new medicament may involve the participation of chemists, physicists, laboratory technicians, physiologists, biochemists and roentgenologic technicians who may not themselves be concerned at all with the traditions of medicine as a profession. Insulin, for example, was developed by biochemists, physiologists and a practicing physician. Whereas an ethical physician might not derive remuneration from a patent, biochemists or physiologists might do so. Certainly the name of the physician Banting is as much associated with the discovery as those of his colleagues, Macleod, Collip and Best. Finally, if

the discoverer fails to patent his discovery, any one else may do so and thus steal both the discovery and the profits. The tremendous advantages of being first in the field with a new medical preparation are well recognized in the pharmaceutical industry.

In a recent issue of *Science*, Dr. Allen Gregg considered particularly the new questions raised by the patenting of products through universities. In order to avoid possible ignominy and recriminations against physicians who might patent medical discoveries, and especially when the work was done under the auspices of and with equipment provided by universities, it has become customary to have such patents taken out in the name of the university, college or research institution and to control and promote the preparations under boards appointed by these universities. Numerous universities now resort to such patenting to obtain money to support further research but also, possibly, with the idea of rewarding suitably the investigators of products used in medicine. Already medical patents are controlled by Harvard, Toronto, Columbia, Cincinnati, Wisconsin, Stanford, St. Louis, and Northwestern universities by the Mayo Foundation and by the Scarlet Fever Foundation, of the McCormick Institute for Infectious Diseases.

As Dr. Gregg emphasizes, there may be excellent arguments in favor of such patents, yet their operation has already produced innumerable difficulties. Extraordinary jealousies develop between members of the same research staff because of special advantages accruing to those who derive income from patents. A tendency develops to promote new products rather than to examine them critically. The acquisitive desire, inherent in many persons, eventually leads to a psychological frame of mind described as "royalty crazy."

Vast sums must be accumulated for the protection of patents—to prosecute infringement. Extraordinary secrecy must be maintained, interfering with academic freedom in research. The existence of patents inhibits research on similar products or with the same materials by physicians in practice and by investigators in medical schools and universities. The university, once in the field of patents, as a routine attempts to protect every tiny innovation or result, eventually devoting more time and money

to protect old discoveries than is spent on new research or on the studies necessary to determine the actual value of discoveries already made.

Sir Henry Dale, director of the National Institute for Medical Research in London, accepts the medical tradition as embodying the true ideal, since the ultimate aim of medical research is to provide knowledge for the relief, cure or prevention of human suffering. In a recent address he contrasted the work done by physicians in practice and medical investigators in universities with the type of research carried on in the laboratories founded by industry. Sir Henry Dale expressed his conviction that a general use of patents in all parts of the field of therapeutic research would definitely hinder rather than promote progress. He felt that the greatest danger was in connection with a discovery of the biologic type. Particularly was he inclined to regard the medical patent as a peculiarly dangerous weapon when wielded by the good intentions of the academic amateur. The danger in patents in the chemical field did not seem to him so ominous, because only industrial research and vast organizations can make these preparations generally available at low prices. Nevertheless, only clinical trial in the hands of physicians under controlled conditions can ever determine with certainty the real value of any therapeutic product. Hence the development of such products must be a cooperative effort. This fact should not be forgotten by those who administer patents in the medical field.

Our new order of living in the machine age, the development of specialization in medical practice, the incorporation of great industries for the exploitation of laboratory discoveries, and similar factors seem to make necessary some change in the medical point of view concerning medical patents. The control of such patents by universities has to some extent assured standardization of products. Usually only reputable firms capable of developing and exploiting products honestly are granted licenses to participate in the manufacture and sale of products controlled by universities, although there are glaring exceptions. However, as has already been mentioned, there is extreme un-

evenness in the manner of administration of various patents by the groups involved. Conceivably the best interests would be served if some central body might be developed, wholly altruistic in character, capable of administering medical patents for the benefit of the public, and assuring a reasonable remuneration to the investigator, the devotion of much of the profit to research, and adequate returns to manufacturers willing to develop quantity production and distribution in an ethical manner. Such a central body might also set up requirements for adequate clinical research in connection with the development of new products, so that premature launching of unestablished products on the medical profession or on the public might be avoided.

In the opinion of the Council on Pharmacy and Chemistry of the American Medical Association, such premature exploitation is exactly what has occurred in relationship to the use of preparations of copper and iron. Leaving aside the question of priority in the discovery and the difficulties involved in preventing physicians from prescribing mixtures of copper and iron should they wish to do so; disregarding the fact that copper occurs as a natural contaminant in practically all iron preparations, and that too in amounts apparently sufficient to bring about the desired therapeutic results, there still remains for debate the question as to whether or not the discovery is of practical value in the field of therapeutics.

The questions here raised must inevitably concern the scientific bodies of the American Medical Association as well as the Judicial Council, the House of Delegates and the Board of Trustees. Perhaps some suitable means will be evolved whereby the American Medical Association may lend its authority and influence to the establishment of a technic for the control of medical patents in the best interest of the public welfare and for the advancement of scientific medicine.—*Jour. A. M. A.*, July 22, 1933.

### **The States' Responsibilities in Medical Care**

In numerous discussions of state medicine which have been published from time to time in various medical periodicals, little cognizance is taken of the extent to which the state has al-



ready invaded the field of medical care in various communities. The answer to the question so far as it concerns the state of New York appears in our current issue in the article by Dr. Thomas Parran, Jr., commissioner of health of New York State. In that state, appropriations for public health now approximate many millions of dollars, including \$20,000,000 annually for mental diseases involving the care of 55,000 patients, and an investment of \$19,000,000 and an annual expenditure of \$3,553,000 for upkeep of tuberculosis sanatoriums, approximately \$2,537,184 for school health services and vast sums for the care of the crippled, the control of venereal diseases, public health, nursing, free dental care, free medical care in the current emergency and similar functions. Fifteen per cent of the population of the state of New York were on the relief rolls in April, 1933. Two thirds of the hospital beds in New York state are owned by the public and supported through taxes. As a result of his survey, Dr. Parran is inclined to the belief that increasingly in the future the state will invade the field of medicine. In the discussion of his paper, two distinguished practitioners deprecated this trend. Dr. W. H. Ross, a former president of the New York State Medical Society, urged a halt on the extent to which intervention by the state is increasing in New York, and Dr. Nathan B. Van Etten indicated the extent to which government interference is tending to demoralize and pauperize both the people and the profession. It is well to have available such a competent statement as that by Dr. Parran concerning the extent of medical practice by the state in New York. The tendency is present and the medical profession will do well to be aware of the trend and to control it when possible. THE JOURNAL has emphasized repeatedly the manner in which various bureaus and public officials have been gradually broadening their functions and invading the field of medical practice. It is a natural tendency of bureaus to mushroom out. More functions mean more appropriations. More appropriations mean more employees, more prestige and more power. Such expansion, uncurbed, will inevitably be disastrous not only to medicine but to the state itself.—*Jour. A. M. A.*, July 29, 1933.

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